Lactose Gelatin Medium

Lactose Gelatin Medium is used for detection of Clostridium species from food samples.

**Composition**

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Gms / Litre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lactose</td>
<td>10.000</td>
</tr>
<tr>
<td>Disodium phosphate</td>
<td>5.000</td>
</tr>
<tr>
<td>Gelatin</td>
<td>120.000</td>
</tr>
<tr>
<td>Phenol red</td>
<td>0.050</td>
</tr>
<tr>
<td>Final pH (at 25°C)</td>
<td>7.5±0.2</td>
</tr>
</tbody>
</table>

**Formula adjusted, standardized to suit performance parameters**

**Directions**

Suspend 135 grams in 1000 ml warm distilled water. Heat to boiling to dissolve the medium completely and dispense 10 ml amounts in 15x150 mm screw capped tubes. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Just before use, heat to boiling to remove dissolved oxygen and cool rapidly to incubation temperature.

**Principle And Interpretation**

Members of the genus Clostridium are distributed widely in nature and are found in soil as well as in fresh water and marine water sediments throughout the world. Clostridial species are one of the major causes of food poisoning and gastro-intestinal illnesses. They are gram-positive, spore-forming rods that occur naturally in soil. Among the family are: Clostridium botulinum, which produces one of the most potent toxins in existence; Clostridium tetani, causative agent of tetanus; and Clostridium perfringens, commonly found in wound infections and diarrhoea cases. The use of toxins to damage the host is a method deployed by many bacterial pathogens including Clostridium.

Lactose Gelatin Medium is prepared as per APHA (3) for detecting Clostridium species from food samples. The medium contains lactose which is fermented by the Clostridium species, mainly by Clostridium perfringens yielding acid and gas. Phenol red is the pH indicator which turns yellow at acidic pH. Gelatin is usually liquefied by Clostridium perfringens within 24-48 hours. Disodium phosphate buffers the medium.

**Quality Control**

**Appearance**

Light yellow to pink coloured homogeneous free flowing slightly coarse powder

**Colour and Clarity of prepared medium**

Red coloured clear to slightly opalescent gel forms in tubes.

**Reaction**

Reaction of 13.5% w/v aqueous solution at 25°C. pH: 7.5±0.2

**pH**

7.30-7.70

**Cultural Response**

M628: Cultural characteristics observed under an anaerobic condition after an incubation at 35-37°C for 48-72 hours.

<table>
<thead>
<tr>
<th>Organism</th>
<th>Lactose Fermentation</th>
<th>Gelatin liquefaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clostridium perfringens ATCC 12924</td>
<td>Positive reaction, yellow colour</td>
<td>Positive reaction</td>
</tr>
<tr>
<td>Clostridium sporogenes ATCC 11437</td>
<td>Negative reaction, no colour</td>
<td>Positive reaction</td>
</tr>
</tbody>
</table>
colour change
or red

**Storage and Shelf Life**
Store below 30°C in tightly closed container and the prepared medium at 2-8°C. Use before expiry date on the label.

**Reference**